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CONTENTS

Children's Questions as a Source of Curriculum Material . . 57
EDGAR DALE, *Bureau of Educational Research*

Research Needed in Interest Evaluation 67
VIVIAN WEEDON, *Bureau of Educational Research*

Investigations of Teacher Supply and Demand Reported in 1936 72
R. H. ELIASSEN, *Bethany College*
EARL W. ANDERSON, *Bureau of Educational Research*

Editorial Comment 75

Readings 77

BOOKS TO READ—*How to Use Psychology in Business, Measurement in Psychology, The Teaching of Mathematics, Music Integration in the Junior High School, The Writing of Modern Prose, An Introduction to Human Ecology, The Story of the American Negro, A Preface to Racial Understanding, Youth Serves the Community, An Introduction to Teaching, The School in American Society, The Campus and Social Ideas, Man and the Motor Car.*

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Educational Research Bulletin

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Children's Questions as a Source of Curriculum Material

By EDGAR DALE

CHILDREN'S questions have been utilized almost not at all in curriculum construction. This failure to use what to the writer seems an important source of data for curriculum construction may be due to two causes. Teachers and others may feel that children's interests are difficult to measure, not to be trusted, that they are transient and ephemeral, easily moved from one object to another, and therefore an unreliable source of curriculum objectives. A second cause for failure to use such questions may be the inept and cumbersome methods which have been used to collect such data.

One of the first studies of children's questions is reported by Laura E. Mau, in which the questions regarding certain objects asked by children in the kindergarten, first, second, and third grades, were recorded. The questions were whispered either to Miss Mau or to her assistants. She shows the percentage of questions asked concerning animal, plant, and physical phenomena. The children's questions almost exclusively dealt with the identification and the activities of the objects.[1] The technique used to get the children's questions is highly suggestive. Strangely enough, only one other investigator has used it. If further studies were made in this field, it would be advisable for the investigator to present data concerning the reliability of his findings.

Elliot R. Downing classified 742 questions which had been asked by boys and girls and appeared in the Science Department of the *St. Nicholas Magazine*. The investigator did not use the questions to indicate the specific objectives of elementary science but merely to determine whether children are most interested

[1] Mau, Laura E. "Some Experiments Regarding the Relative Interests of Children in the Physical and Biological Materials in the Kindergarten and Primary Grades," *Nature Study Review*, VIII (November, 1912).

in animals, plants, or physical materials.[2] The order of preference was the same as that obtained by Miss Mau, who used a different technique of collecting questions. This resemblance suggests that both methods are reliable.

Charles W. Finley secured data on children's interests in plant and animal life, and physical phenomena. He took a mud puppy in a glass aquarium into a classroom, and the pupils in grades three to eight viewed it. The questions asked about the animal were recorded—8,328 questions were asked by 1,718 children. The questions were classified under twenty headings.[3] This technique is somewhat different from the others, since it assumes that certain subject matter shall be taught, but secures the objectives for that course through children's questions.

A study in the field of household chemistry is reported by Pauline G. Beery. Questions were collected by two different investigators through letters of inquiry, personal interviews with high-school teachers of home economics, and round-table discussions and other similar gatherings of high-school teachers.[4] Approximately one thousand such questions were secured and utilized as one basis for the construction of a course in household chemistry.

C. A. Pollock sent a form letter of approximately three hundred words to the eighth-grade pupils of Columbus, Ohio. In this letter he asked each pupil to state his interests in science, and gave examples of questions he might ask. Mr. Pollock received thirty-five hundred questions, and then tabulated them on the basis of the nouns used. Further, he compared these questions with the questions which were implicitly answered by the general-science textbook then in use in the city. Only 43 per cent of the questions were answered, or touched upon, by the author of this textbook.[5] Mr. Pollock's assumption that the textbook should have answered all the questions of these pupils is open to doubt. If the number of questions collected had been doubled, it is possible that more questions which the textbook answered would have been received. Mr. Pollock

[2] "Children's Interests in Nature Materials," *Nature Study Review*, VIII (December, 1912).

[3] Finley, Charles W. "Some Studies of Children's Interests in Science Materials," *School Science and Mathematics*, XXI (January, 1921), pp. 1–24.

[4] Beery, Pauline G. "A Practical Course in Household Chemistry," *Journal of Educational Research*, V (February, 1922), pp. 125–34.

[5] Pollock, C. A. "Children's Interests as a Basis of What to Teach in General Science," EDUCATIONAL RESEARCH BULLETIN, III (January, 1924), pp. 3–6.

also assumes relative permanence of interest. This may prove unjustifiable, and it is entirely possible that the pupils were interested in the questions actually answered by the textbook. Pupils cannot ask questions about subjects on which they have no information. This problem of transiency or permanence of pupils' interests needs further investigation. We need to go back to the same pupils and have them evaluate the questions they have written to see whether these same interests continue.

F. D. Curtis obtained questions on science not only from pupils, but also from their mothers and fathers. The technique used was to submit a letter to the pupils, which duplicated in a large measure the letter used by Pollock. Each pupil was asked to think about his interests, write down five questions, and bring them back to school with five questions from his mother and five from his father—3,330 questions were received from pupils and 3,332 from adults.[6] The relationship between questions asked by adults and those asked by children is very well brought out by the fact that 37 of the most frequently occurring scientific interests of boys and girls combined occur among the 47 most frequently occuring scientific interests of men and women combined.

Curtis' request was made to the general-science pupils in the junior high school and early senior high school, which probably meant that grades seven, eight, and nine were included. No differentiation between grades was made, so we are not informed whether the science interests of seventh-, eighth-, and ninth-grade pupils are divergent. The assumption inferred here, that they should be studied together, probably needs scrutiny. If we were to find considerable divergence, especially in certain areas, then the course written for ninth-grade pupils ought to differ in material degree from that written for seventh-grade pupils. It should next be noted that the questions were received from pupils in larger city high schools. There is a possibility, therefore, that questions would not have been the same if different geographical areas had been sampled.

We need, also, to note that both Pollock and Curtis have given certain specific clues to the children as to the type and nature of questions desired. Curtis analyzed his data in three

[6] Curtis, Francis D. *Some Values Derived from Extensive Reading of General Science.* New York: Teachers College, Columbia University, 1924.

different ways: first, as to whether the questions were in a physical or biological field; second, as to the nature of the information asked for; and third, an analysis to get at the real crux of interest. No data are given on the reliability of the findings except a correlation between 96 items common to both the Pollock and Curtis lists. This correlation was .69±.04.

G. S. Craig, in his study of science questions, gave no clues[7] and criticized others for so doing. The assumption involved in both methods needs careful testing.

Franklin Bobbitt reports the results of a study made by W. L. Meyers at the University of Chicago. The questions used were those appearing in the health columns of 175 issues of the *Chicago Daily Tribune* in the years 1918, 1921, and 1923, and 140 issues of the *Chicago Daily News* for 1918 and 1919. The issues selected were evenly distributed in order to get seasonal differences. Seven hundred sixty-two questions were secured altogether, and these when grouped concerned thirty-five health difficulties. About one-half of the questions were concerned with the first five topics in order of frequency; 139 with the first topic alone.[8] This indicates clearly that the data, except perhaps for the first few items, cannot be considered reliable. Many more questions will have to be analyzed if we are to obtain a large enough sample to insure drawing reliable conclusions concerning frequencies.

Great care must be utilized when data of this kind are under consideration. In this case, food was the most popular topic. What does this mean? Does it mean that we should make food the central and most important topic in a health curriculum? This inference is probably unwarranted, since we do not know the factors which cause a person to send in questions to a column of this kind. The ages of the questioners are also important to know. It is entirely possible that the questions which one writes to a column are less critical in nature than those which one actually wishes answered. For example, if a person were severely ill, he would not write to a column about it. He would write to a column only about those things in connection with which

[7] Craig, Gerald S. *Certain Techniques Used in Developing a Course of Study in Science for the Horace Mann Elementary School.* New York: Teachers College, Columbia University, 1927.

[8] Bobbitt, Franklin. "Discovering the Objectives of Health Education," *Elementary School Journal*, XXV (June, 1925), pp. 755–61.

the element of time was not exceedingly important. Apparently, therefore, we need to compare questions received from sources of this kind with those written under a wide variety of circumstances.

We also have the problem of deciding whether or not these are bona fide questions. There is a possibility that sometimes they represent the health editor's opinion of the questions that ought to be asked, and also of those which are important enough to receive an answer. Downing mentions this factor in his study.

Lou H. Thompson, of the Fairwood Elementary School, Columbus, Ohio, made a study of children's questions which is reported in the EDUCATIONAL RESEARCH BULLETIN. The questions were collected from teachers and parents. Teacher after teacher reported "My children do not ask questions, though I thought they did." Thirteen hundred and fifty-five questions were submitted by teachers and parents. These ranged from 228 questions in geography to seven in penmanship. Some samples of questions asked are the following:

1. If the sun is so hot, why doesn't it burn the clouds?
2. Why do people in different countries talk different languages?
3. Why do they have earthquakes in Japan?
4. Where does gas come from?
5. How can the bank afford to pay us interest?
6. Why do men pay taxes?[9]

Piaget was interested in questions from the point of view of the mental development of children and developed a classification of these questions into those of causal explanation; questions of reality as divided into facts and events, time, and place; questions of actions and intentions, or rules; questions of classification.[10] His studies may be of interest to curriculum workers. Stern, Scupin, and Rasmussen made similar studies.

Among other studies not reported here are those by E. Lawrence Palmer, "How to Meet Some of Children's Nature Interests,"[11] and by Carleton W. Washburne, *Scientific Method in the Construction of School Textbooks*,[12] and a

[9] "Children's Questions," III (November 26, 1924), pp. 347, 350–52.

[10] Piaget, Jean. *The Language and Thought of the Child.* New York: Harcourt, Brace and Company, 1926.

[11] Palmer, E. Lawrence. "How to Meet Some of Children's Nature Interests," *Nature Study Review*, XVIII (January-February, 1922), pp. 23–30.

[12] Washburne, Carleton W. *Scientific Method in the Construction of School Textbooks.* Yonkers-on-Hudson: World Book Company.

critique of the use of science interests as a source of curriculum material by Frederick L. Fitzpatrick.[13]

Questions were used as one source of curriculum material in the state course of study in health in Ohio. The study was carried on jointly by Mr. Delbert Oberteuffer and the writer. Questions of high-school students, it should be pointed out, were only one source of the curriculum material. Common health deficiencies of children and adults were secured from health statistics. The sixteen schools which co-operated in the study collected records of personal health problems of students. Finally, important for the purposes of this discussion were the questions which pupils asked relating to health—usually in the classroom.

The questions asked by the students were recorded in two ways. One method was to appoint a student reporter who wrote out all such questions and later handed them to the teacher. The second method was to have the teacher jot down the questions briefly when they were asked and as soon thereafter as possible write them out in their complete form. All such questions were then reported on a specially prepared blank and sent to Mr. Oberteuffer's office at bi-weekly intervals. If the returns were not received at the proper time, a brief note was sent to the school asking for them.

Through this technique twenty-seven hundred questions were reported from the sixteen co-operating schools. Here are some of the questions asked:

1. What are some good home exercises for developing the body?
2. What are the best games for crippled children?
3. Why am I winded when I run a short distance?
4. How much sweet food should a person eat?
5. Should every city have a sewage-disposal plant?
6. Is it harmful to study after eating?
7. How can one become less self-conscious when one recites?
8. Is it harmful to marry a relative?

An attempt was now made to discover whether these questions were likely to yield reliable and valid results if much dependence were to be placed upon them as representing highly important health problems of youth.

The sufficiency of the list was checked in several ways.

[13] Fitzpatrick, Frederick L. *Science Interests.* New York: Teachers College, Columbia University, 1936.

First, we attempted to discover whether or not our list of questions omitted whole areas of health instruction from its scope. We did this by making an analysis of all the general topics presented in thirty-one books used in the junior and senior high school. The results showed that questions were asked on practically every one of these topics but that in many cases the number of questions was meager.

Second, we attempted to check our sampling by determining whether new and important questions were being received with the additional sampling. To do this we grouped the questions into four parts and made a continuous analysis of the nouns and verbs dealing with health which appeared in successive samplings. We found that there was a decreasing number of these in the last 300 questions studied. In the last group of 41 nouns, however, we secured such important ones as *filtration plant, athletics, convulsions, gargle, health officer, immunity, lymph, rubbish,* and *mucus.* Although these nouns and the other 32 could be classified under fields already touched, nevertheless they show specific signs of interest, they are important, and have received no mention previously.

Similar comparisons were also made with Pressey's list of technical terms, and we found many important omissions, such as *blood pressure, apoplexy, bronchitis, pellagra, adrenalin, caffein, laudanum,* and *strychnine.* In general, however, the omissions were anatomical, medical, and biological terms that are not likely to be known until one has studied such subjects.

We see, therefore, that the health worker who wishes to use pupils' questions as a working basis for curriculum construction is met with the same problem of sampling as is the investigator of vocabulary. The investigator of vocabulary finds at once that certain words such as *a, the, for, and,* will constitute the bulk of the words found. In Horn's sampling of five million adult words, a word can get into his ten thousand most common words by being used with a frequency of only 15. We found that in our twenty-seven hundred questions the following terms appeared only once: *appendicitis, board of health, breakfast food, cathartic, cesspool, chicken pox, chiropractor, mumps, orange, bruise, clot, coagulate, consult, dieting, exercise, filter, fried, heal, immunize, inoculate, operate,* and *pasteurized.* The inadequacy of the sampling was further disclosed through the following study.

A list of 120 questions on 24 different health topics was made up as follows: In each group of five questions on a topic there was the most frequently mentioned question on the topic, three other questions, each of decreasingly lower frequency, and one question not asked at all by the students but considered interesting and important by the investigators. Students were asked to evaluate these questions on three categories of interest.

A number of the questions never asked by students secured high rating from them. No one, for example, asked the question, "What is the correct type of toothbrush to use?" yet 85 per cent of the seventh-grade girls at Toledo, Ohio, who were questioned, said that they were much interested in knowing the answer, and 55 per cent of the boys so indicated. None asked, "What is parrot fever and why is it dangerous?" yet 65 per cent of the girls and 55 per cent of the boys said that they were much interested in securing an answer to this question. We concluded, therefore, that high-school students are interested in questions which are not asked by them.

WE WISHED a more direct test of whether our list of questions was adequate. Instead of waiting until the question arose more or less spontaneously in the classroom, we asked the pupils to write down for us those health questions which they would like to have answered. These questions were collected directly by Mr. Oberteuffer. He first established rapport with the students by telling them of the importance and value of such questions, suggested that they need turn in no questions unless they wished, and then submitted to them an outline which gave clues to 35 health areas in which they might be interested. This procedure gave us about twenty thousand questions. These questions were then classified by Mr. Oberteuffer into what he considered functional health areas. Two types of questions were thrown out during this classification. The first was a relatively small number clearly written in a desire to be smart. The second type was written either to comply with the request, or because the student had not understood what he was to do. Such questions usually took the form of "What is —— ?" If there was only one such question in a group which the child handed in, it was assumed that the question was a real one. If the entire group was of this type, however, it was assumed that they were not real problems.

These questions might conceivably have been resubmitted to the children to get an evaluation of their relative interest, as we had done before with a smaller list of questions. This was ruled out as being impractical with the budget and time limitations which we faced. We did try, however, to get the judgments of adult experts as to the interest of 120 of the key questions to boys and girls in the eighth grade. Eighth-grade students also reacted to these questions in terms of their interest. Here are the results in terms of correlation:

1. Ranking of 120 questions for interest by 20 health experts and by 109 Cleveland eighth-grade students ..... .42
2. Ranking of 120 questions for interest by 20 health experts and by 119 ninth-graders ..... .45
3. Ranking by 9 experts (men) and 11 experts (women) of the questions "of very much interest" to students ..... .65
4. Same group of experts with total scores of each of the questions (adding the 1, 2, and 3 ratings) ..... .70

These correlations show that the experts agree fairly well among themselves as to what would be an interesting question, but they do not agree nearly so well with the students.

THE final step in the program was cared for by Mr. Oberteuffer, who classified the questions under what he called main questions and subquestions. These questions supplemented by health problems and data from other sources, were then set up as a course of study[14] for the six high-school grades. It must be noted that this course of study is based only in part on students' questions.

The strengths and the weaknesses of this particular method of approach in curriculum construction in the opinion of the writer are several. An analysis of these health questions shows clearly that they have the tang of reality to them. They give functional curriculum material. They are questions which some young persons want answered.

This study gives no data on the transiency or permanency of these interests, but, by providing an opportunity for further questions from the class at the time of instruction, this deficiency may be taken care of in part.

Since much emphasis is placed upon individualized study,

[14] Oberteuffer, D. *A Program for Junior and Senior High Schools.* Columbus, Ohio: Ohio State Department of Education, 1932. (Ohio State Department of Education, Health and Physical Education Series, Vol. III)

the curriculum can include many questions for study which may not have high interest value for all students.

In areas where they have no experience students cannot ask questions, except of the vaguest sort. We found certain vital questions, especially those relating to public health, which were not often asked by high-school students. Obviously, such a gap must be filled by the school.

This method, if extensively used, would give students training in techniques of asking good questions. Asking good questions is not simple, and to ask the question which will point the problem clearly, is something that not all students learn. Asking a question, too, is one of the ways we have of organizing our knowledge, since to ask a question is an admission on the part of the questioner of a gap in his knowledge, a gap that needs to be filled. The answer, if accepted, becomes a part of a more extensive and reorganized system of knowledge.

An important curriculum inference which can be drawn from these data is the need for more self-help mechanisms for students. It is often a difficult and laborious task to get answers to important questions. And yet through competent librarianship, through much better reference books and better indexes, many of the answers to children's questions could be obtained by them without teacher assistance.

Finally, children's questions are of great value in curriculum construction. Techniques of collecting and utilizing them, however, are, in the main, as yet unexplored.

Research Needed in Interest Evaluation[1]

By VIVIAN WEEDON
Directed by Ralph W. Tyler

SINCE the seventeenth century, interest has held a definite place in educational philosophy. Since the last decade of the nineteenth century, its measurement has received the time, attention, and serious thought of an increasingly large number of educators. Perfection of techniques became the goal of these persons and, beginning with 1920, an enormous volume of work has been done in the refining of these techniques. High reliability and high objectivity coefficients have been found for a number of measures. Elaborate scoring techniques, employing complicated statistical procedures, have been devised. Much effort has been expended toward the simplification and mechanization of these scoring techniques. Internal consistency of the measures, that is, the ruling out of every item in the test which does not give the same results as the total score, has been sought, on the assumption that the total score was right and everything that did not agree with it must be wrong.

But throughout all this period *interest* has remained undefined. Its meaning has either been unconsciously assumed, or it has been regarded as an intangible which cannot be defined. The validity of interest measures has not been determined in terms of a definition of interest but in terms of one of three external criteria: the accuracy of the prediction of the measure, that is, the success with which it divides the "sheep" from the "goats"; the extent to which it correlates with the teacher's estimate of the pupil's interest; or some untested assumption, such as, the amount of information one has about a subject is positively correlated with his interest in that subject.

Another group of educators came to feel that all this technical refinement was tending to get further and further away from the real objective for which interests measures were designed. They said that they were concerned with the behavior of a pupil, not with the results of a highly objective and reliable test which gave evidence only of the information that the pupil

[1] "An Investigation of Some of the Difficulties Involved in Evaluating the Development of Interest." 1936. Ph.D. thesis on file in Library of the Ohio State University.

had, or perhaps of the extent to which the pupil's checking of a list of items agreed with a similar checking made by a group of doctors, lawyers, or prisoners. They were not especially concerned with knowing that the pupil would like to own an adding machine or a high-school diploma, a book of poetry or a tuxedo. What they wanted to know was if the pupil were interested in reading the type of literature that they wished him to read, interested in taking the types of exercises that were good for him to take, interested in listening to the kind of music they wished him to enjoy. They wanted to know specifically what he was interested in now, so that they could appeal to those interests.

They wanted to know the pupil's reaction to every important test item—not merely to those items carefully selected to give similar results. That is, they felt that by demanding internal consistency, the test technician had shut his eyes to vital evidence.

This group tended to cast aside all technical aid. They came to feel that they could know the pupils' interests simply by knowing the pupils. Since the teacher's estimate of a pupil's interest was used as a criterion in the construction of tests, why not, they argued, use the criterion itself? "I would give more credence to a good teacher's judgment than to the results of any test now available,"[2] said, not a left-wing Progressive, but a conservative statistician in the spring of 1931.

But teacher judgment had long ago been proved fallible! Such was the dilemma when the writer began her search for a technique of measuring interest.[3] Should one work feverishly to improve the objectivity and reliability of a measure giving information that was not desired, or should one accept the unreliable unobjective estimate of one who knew the child.

There was, it is true, a small group of educators who felt that just living with pupils, just teaching them, was not a satisfactory method of gaining information about their interests. This group consisted largely of teachers who wanted to improve their own judgments, their own estimates. Reliability and

[2] From notes taken by the writer on lecture given by Karl John Holzinger, of the University of Chicago, in Education 307 (statistics).

[3] The search was made at the request of Edgar Dale, of the Bureau of Educational Research, Ohio State University, who wished to use interest measures in connection with his work in motion-picture appreciation.

objectivity might be obtained, they felt, without sacrificing validity. Tentatively, this group had begun to try to utilize technical aid in discovering the information which they really wanted to know. Anecdotal records, diaries, and logs were among the techniques that were being tried. The work was hindered, however, by the lack of a clear-cut knowledge of the problems involved in interest measurement. The study, reported here, was planned to disclose these problems.

Once the problems are brought to light, research on them will be needed. The points where it is indicated that control is needed will have to be carefully studied to find how control can be introduced without invalidating the results. Over-control, control out of relation to purposes, was at the basis of the inadequacy of many measures previously developed.

In order that these problems be not covered up by false controls, the uncontrolled estimates of a pupil's interest made by competent judges and based upon uncontrolled observation of the pupil's behavior in an uncontrolled situation were selected for study. The data were gathered in the following manner. Ten sixth-grade pupils were observed, one pupil at a time, while engaged in their regular academic work. All observable actions of the pupil, and as many as possible of the actions of the group of which he was a member, were recorded. These records were then turned over for analysis to seven competent judges, each of whom had taught at the elementary level. The judges were given most flexible directions for their analysis. In brief, they were asked to report every evidence of interest or its lack that they noted in reading the records. The judges' analyses were then treated to find out the problems that arose through the lack of control both of the observed situation and of the directions for analysis.

The data from these analyses were then organized around four central questions in order that the difficulties in answering these questions would be apparent. These questions were: From what types of behavior do the judges infer the presence or lack of interest? To what extent will different judges agree in their selection of incidents or episodes revealing presence or lack of interest? To what extent will different judges agree in their interpretation of these episodes? How long is it necessary to observe in an uncontrolled situation in order to gain a reliable picture of a pupil's interests?

From the attempt to answer these questions on the basis of an uncontrolled estimate of a pupil's interest made by a competent judge and based upon uncontrolled observation of the pupil's behavior in an uncontrolled situation, the problems listed here became clearly apparent.

First, from the point of view of interests, what is significant behavior?[4] Twenty-six different types of reasons for inferring interest or its lack were noted. Chief of these—for interest—was concentration; for lack of interest—restlessness. Included were some of the types of reasons used by former technicians, such as, having information, giving the right answer, and attending to work. Further, over one-half of the evidences of significant behavior mentioned were mentioned by only one judge.

Second, from the point of view of interests, what constitutes a unit of significant behavior? The judges disagreed greatly in their descriptions of the *episodes*[5] and in the length of time covered by each episode. Behavior which one judge considered a unit was considered as three or four units by other judges.

Third, what is a homogeneous classification of activities or objects of interest? The judges also disagreed greatly in their definition of the activity or object in which interest or its lack was expressed. Some were defined very specifically, some very generally, some by activity only, some by object only, and some by a combination. This made it necessary to rule arbitrarily on the activities and objects that were to be classed together. Under the most strenuous definition of "similar," only 9 per cent of the episodes were similarly interpreted. The highest percentage of similarly interpreted episodes was found when interpretations were considered similar if the same noun appeared in both. Under this definition, 40 per cent of the episodes were similarly interpreted by two or more judges and 80 per cent received dissimilar interpretations from two or more judges.

Fourth, how may the observed situation be controlled so that information desired can be gathered without the long and expensive waiting necessary in an uncontrolled situation? Even

[4] It has been called to the writer's attention that this statement is not clear to those unfamiliar with evaluation terminology and that a simpler statement of the same idea is that interest, undefined, is not a workable concept. As applied to evaluation, this clarification is entirely acceptable to the writer.

[5] Each unit of behavior mentioned by a judge was termed an *episode*.

under a most liberal definition of "similar," only 18 per cent of the activities and objects mentioned were mentioned in both units of one report. Of these, all but one were activities and objects of class periods, such as discussion, reading, or mathematics. Clearly this is a problem which demands attention.

There were uncovered, as well, a group of questions dealing with the manner in which the uncontrolled observed situations could be most usefully employed. That is, if a satisfactory definition of significant behavior, a homogeneous classification of activities or objects, and a limited set of activities or objects interest in which is to be evaluated had been determined, how well will competent judges agree on the selection of significant behavior, on the unit of behavior selected, on the interpretation of the same behavior, and on the length of time necessary to observe for reliable evidence?

The questions are not unrelated. The answer to one may throw light on the answer to another. The answers may not be the same in all cases. The particular objective, the particular set of activities or objects, the particular situation will have to be taken into consideration. The questions will serve, however, as a starting point for further research.

THIS investigation has been unique in that the purpose was to find problems—not to solve them. In regard to interest measurement there have been two schools of thought. One school has held that it is possible to know a child's interest simply by knowing the child and that the use of techniques distorts the findings. The other school has employed elaborate and refined techniques in the construction of instruments giving information of little or no use to many persons concerned with the development of interest. In the belief that satisfactory means of evaluating interest had been developed by neither school, the study described here was planned. The aim of the study was to locate and define the problems involved in interest measurement in order that further research might be planned at the points where it is most needed.

Through an examination of the least technical measurement of interest—namely, the uncontrolled estimates of a pupil's actions in an uncontrolled situation—eight such problems have been disclosed. It is the writer's hope that these problems will

[*Continued on page 84*]

Investigations of Teacher Supply and Demand Reported in 1936

By R. H. ELIASSEN
AND
EARL W. ANDERSON

ONE indication that the oversupply in teaching is rapidly being reduced is the marked decrease in studies reported in teacher supply and demand during the year 1936; only eleven such publications were found as compared with twenty-six issued in 1935. Many of the studies reported in 1936 were based on data for the year 1935. The upturn in teacher opportunity which began in 1934 continued in 1935 with indication that during 1936 the improvement continued steadily.

It is interesting to note that most of the reports in 1936 were based on reports from teacher-placement bureaus in various sections of the country. The Michigan Bureau of Appointments reported 1,355 calls for teachers in 1935 as compared with 885 in 1934 and 408 in 1930. At the University of Chicago there were 1,336 calls in 1934–35 as compared with 568 for 1932–33(4). The number of placements in full-time positions made by the Bureau of Appointments of Teachers College, Columbia University, increased 22 per cent for the year 1935–36 over the preceding year. The average salary increased from $1,719 to $1,825(5). Anderson, of Ohio State University Appointments Division, stated that 68 per cent of those desiring to teach in 1935 secured such employment as compared with 58 per cent for 1935 and 43 per cent for 1934(1).

The most significant study for 1936 of which we have a record is that of Umstattd. His data concern placement success in 260 collegiate institutions for the year 1934–35 representing every section of the country. Sixty-five per cent of the graduates of that year were placed, which compared favorably with 56 per cent for 1933–34. The West Central states made the best showing in placing graduates in teaching positions; the New England states rated lowest. According to Umstattd's report the demand for teachers of sciences—particularly biology and chemistry—topped the list together with the elementary-

school field. Secondary-school placements in biology, chemistry, and physics showed increases of 22 per cent, 20 per cent, and 23 per cent, respectively, over 1933–34. Special fields such as agriculture, industrial education, nursing education, and public-school music offered better opportunities than did academic fields(9).

At the Ohio State University 90 per cent of the available candidates in agriculture, industrial arts, and home economics and 80 per cent of those in music and elementary education in 1935 secured teaching positions. Fewer were placed in French, chemistry, and history during 1935 than in 1934(1). Verbal reports of placement officers for 1936 indicate a shortage of teachers in many states now existing in elementary schools and in music, commercial subjects, home economics, industrial arts, fine arts, and physical education.

THERE are still some indications of serious oversupply in certain fields. Anderson and Rhode show a great oversupply of certificated administrators for secondary schools in California. There are about two thousand persons certificated when there are only four hundred high-school principalships in the state(2). A committee of the Southern Association of Secondary Schools reported a considerable oversupply of secondary-school teachers in the 11 states whose schools are included in the Association. Little oversupply was reported in the elementary schools for properly trained teachers; in some states shortages existed(7).

The possibility of increased opportunities for teaching is mentioned by Wightman. Some of the new opportunities are in adult education, vocational rehabilitation, visiting teachers, psychological work, nursery school, and kindergarten(11). A long-range study is advocated, and Wightman believes that an expanded program as suggested may demand twice as many teachers as we have at the present time. That would imply an increase of a million teachers in the United States.

The Southern Association Committee found that in the states covered by the Association there was not sufficient information available for estimating the demand and that little is being done toward controlling the supply(7). It was recommended that the resources of the Association be used in stimulating provisions for securing the necessary data through the

various state departments of education and for bringing about co-operative action toward a satisfactory solution of the problem.

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EDITORIAL COMMENT

Democracy

In a concourse as enormous as the Department of Superintendence of the National Education Association and its nebular constellation of organizations at New Orleans, so many phases of all the problems of education are touched in the hundreds of papers delivered that it is difficult to identify central themes. A study of the titles of papers, attendance at the meetings, and newspaper accounts, nevertheless, seem to emphasize this year, to one observer at least, one significant trend in the thinking of the leaders of education.

At the last two annual meetings propaganda in favor of a planned social order was in disfavor among the superintendents. Consensus favored the objective of intelligent understanding rather than an emotional set toward any one plan or program. This year, however, one could detect a swing toward propaganda—not for red, black, or brown "isms" but unmistakably for democracy. The thinking of the superintendents ran toward the emphatic teaching of the fundamental characteristics of a democratic order of society and the advantages that America enjoys in comparison with Germany, Russia, or Italy. They seemed to feel that propaganda should be met with propaganda. They held that American children accepted the fruits of democratic government without knowing the value of what they owned.

There are two methods of causing this awareness. The most vivid is to deprive children of the advantages of democracy, particularly by visiting lands where the advantages have been lost. The next best is to call attention by analysis, illustration, and study to the principles and procedures of the democracy under which they live—to make them missionaries for democracy.

The proponents of an intelligent understanding of democracy necessarily call attention to the problems of democracy, its shortcomings, weaknesses, and conflicts. There is a natural tendency for those who examine problems to criticize. They are likely to assume the good and note the bad, to take strengths for granted and concentrate upon the weakness of the social

order. At New Orleans the superintendents felt that while intelligent understanding of democracy was being taught and the remedies for difficulties explored, children should be impressed with the virtue and value of democratic procedures. They should be impressed with the belief that while the American social body has diseases and conditions which need attention, it is sound and substantial, with a good heart and a sound head. Attention should be paid to the doughnut as well as to the hole.

Perhaps this change of attitude is a by-product of the lift of the depression. For the last four years everyone has been conscious of the breakdown of comfort and satifaction and has been inclined to criticize. With the return of some comforts and the hope for others, the American mode of life is more fully appreciated than in the immediate past. Now, say the superintendents, we should make the children conscious of those fine qualities which the adults are happily beginning to appreciate again.

THERE are two approaches to the appreciation of democratic institutions. By the so-called indirect method, children learn the nature and values of democratic living as by-products of their study of contemporary American life. By the direct method, democracy becomes a topic of instruction like chemistry or physics. Its structure, ideals, procedures, its functions and values are made subjects of study. In such a course the Constitution is taught to show the framework of American government and social polity. The current controversy about the Supreme Court affords an excellent occasion for the examination of the Constitution. The Declaration of Independence is a second document which formulates some of the principles of democracy. Textbooks which have analyzed the democratic idea constitute a third source of materials for the unit. Obviously, discussions of the current social and political problems afford an occasion for showing how the principles of democracy are being used or should be used in the discovery of satisfactory solutions.

It is a matter of common knowledge that high-school graduates at the close of twelve years of schooling know little about the Constitution. The reason is obvious. When any structure

[*Continued on page 84*]

READINGS

Books to Read

LAIRD, DONALD A. *How to Use Psychology in Business.* New York: McGraw-Hill, 1936. ix+378 pp.

This book is admittedly written for the business reader rather than the academic psychologist. This purpose is reflected in the terminology used, the comparative stress on some topics, and the illustrations. Considered with reference to this end, the job is well done. The ground covered is conventional: individual differences in intelligence and interests with indications of how they are measured; considerable stress on getting along with people, as related to different psychological types; methods of work as affecting fatigue; ventilation and weather; noise.

The only adverse criticism the reviewer has deals with the author's tendency to short-circuit an occasional laboratory method and recommend a crude test which the amateur may apply himself. For example, in detecting falsehood it is suggested that one watch for a quick inhalation whereas the usual procedure is to apply a pneumograph and compute the inspiration-expiration ratio; or negativism is to be diagnosed by grasping the subject's elbow rather than employing a planchette for automatically recording involuntary movements.

A feature worthy of comment is the personal inventories which the reader may check. These deal, for example, with indications of stubbornness or signs of emotional frustration or traits that make one disliked. These little questionnaires are interesting and may lead the reader to a bit of harmless self-appraisal. They should not be taken too literally, of course, because no indication of their reliability or validity is available. Another feature is the occasional illustration which portrays some simple but sound device for improving efficiency in office, laboratory, or home. The book is profusely illustrated with well-chosen pictures, each accompanied by a lucid explanation or other comments. In fact the reader could get a good deal out of the work by merely looking at the pictures and the accompanying notations. The style is readable and well adapted to the group to which the book is directed. The financial success of the work is understandable.

HAROLD E. BURTT

HUNT, THELMA. *Measurement in Psychology.* New York: Prentice-Hall, Incorporated, 1936. xx+471 pp.

"Designed primarily as a textbook for college courses in psychological tests and measurements" and intended "to give a brief survey of the whole field of psychological testing," this book is disappointing, and its title more than misleading. The author's point of view is narrow and non-critical. Theoretical considerations are treated superficially or ignored. There are frequent inaccuracies and inconsistencies. There are serious omissions that will be criticized unfavorably. Why, for example, should any discussion of factor analysis be omitted? Guilford, in his recently published *Psychometric Meth-*

ods, claims that "no single event in the history of mental testing has proved to be of such momentous importance as Spearman's proposal of his two-factor theory in 1904." Is a student using this book to ignore factor analysis entirely? One should perhaps be reconciled to this omission of reference to the work of Spearman, Thurstone, Hotelling, and Kelley in this field, after he has noted the meager and careless treatment given to Thorndike. The parabolic curve which he used in his *Measurement of Intelligence* "to illustrate the general nature of the relation of altitude of intellect to age" is introduced into a brief discussion of mental growth with its abscissa of twenty years divided into 15 equal parts and its ordinate into 8 equal, but undesignated, parts. And what do the ordinates represent? Or how does the author's superficial discussion of the "constancy of relative mental ability," taken with her earlier naïve treatment of mental-age "units" (sic), relate itself to a parabolic function?

For inconsistency compare the following sentences taken from pages 69 and 70:

"Average adults attain a rating on the Stanford Scale of XIV to XVI."

"The mental age of adults as indicated by the test is divided by the age which we take as representing the average adult."

"If 70 is regarded as the dividing line for feeblemindedness, the upper limit for feeblemindedness in adults is a mental age of between 9 and 10 years." To be sure, a mental-age score of 9.8 years does lie "between 9 and 10," and if one divides by 14 the intelligence quotient would be 70, but what is too indicate to the student that he must choose the lowest divisor suggested in the first sentence if the third sentence is to be even partly true?

Pintner, in his *Intelligence Testing*, collected the results of nine studies of the distribution of the Stanford-Binet intelligence quotient in kindergarten and elementary-school populations, in which the respective medians range from 88 to 105. Miss Hunt reproduces Pintner's graph, but tells the student that "the general characteristics of the various distributions are the same and the differences are rather small."

Condensation is necessary in a survey such as the author has undertaken, and omissions must be made, but the practical clinician will question the author's judgment in devoting four pages to the outmoded Pintner-Paterson and United States Army performance scales to the exclusion of any mention of the scales of Stutsman, Gesell, Arthur, and Cornell and Coxe. He will ask further why no reference is made to scores on the Pintner-Paterson scale in terms of percentile rank, a device too often ignored in other scale construction. Here the author had an opportunity to supplement her inadequate discussion of the merits of different relative measures on page 19.

The book represents the point of view of a tester rather than that of a psychologist, and illustrations of its inadequacy for its avowed purpose and the inappropriateness of its title might be multiplied.

FRANCIS N. MAXFIELD

SCHORLING, RALEIGH. *The Teaching of Mathematics.* Ann Arbor, Michigan: Ann Arbor Press, 1936. viii+247 pp.

The author has attempted to meet the need for a source book and guide on the teaching of mathematics. A major portion of the book is devoted to

discussions of modern tendencies and objectives, and to quotations from important articles which have been influential in directing these trends. The chapters on "The Aims of Mathematical Instruction," "Mathematics in the Training for Citizenship," by David Eugene Smith, and "The Foundations of Mathematics" by E. H. Moore are reprinted from other publications. Other chapters deal with such topics as the transfer of training, a description of a laboratory lesson, the measurement of achievement, the use of historical materials, and the like. A relatively small amount of space is given to discussion of specific problems of teaching method. Much of the unquoted portion of the book is written in a summary style which effects both clarity of outline and economy of space, with the result that it includes a large amount of material which has hitherto been scattered. On the other hand, the reader should recognize that the short treatment of many topics is wholly inadequate for arriving at a thorough understanding of the problems involved. Nevertheless, the book should prove to be a valuable reference for both teachers in the field and in training. The author has included a set of exercises at the end of each chapter which will add to its usefulness as a textbook for teacher-training classes.

M. L. HARTUNG

PITTS, LILLA BELE. *Music Integration in the Junior High School.* Boston: C. C. Birchard and Company, 1935. xiii+206 pp.

This book is as fine a piece of work as has been done on the music of the junior high-school period. It is written by an outstanding teacher of junior high-school music who knows the problems of this field and has more than will be found in most communities.

The book contains helpful material and suggestions on teaching on the unit plan on this level. In addition, there is a helpful section dealing with the problem of adolescent voices.

This material need not confine a teacher at all, but serves as a good source book for those who wish to make their own integrations, turning to this book for sources of materials in music, art, literature, and teaching help.

CLOEA CORNELIA THOMAS

PERKINS, VIRGINIA CHASE. *The Writing of Modern Prose.* New York: Henry Holt and Company, 1936. vi+313+lxxvi pp.

The virtues of this book, designed for use in English classes, are twofold: first, it presents a wide range of illustrative material drawn from the writings of both high-school students and distinguished contemporary authors; second, it invites the inauguration of a flexible composition-teaching program by offering, in the appendix, a series of suggested assignments in the place of those of the mandatory species enshrined in bold-face type in the conventional English textbook.

The three divisions of the book correspond to the three chief forms of discourse: description, narration, and exposition. Under each of these headings, the student is first led to see what constitutes excellence by means of numerous literary selections, some of which are fragmentary but unified and some of which are complete; with this substratum of experience he is then asked to find his own tongue and to give voice to his thoughts and emotions.

The author's style is simple and direct, and the detailed helps offered to

the student bespeak an understanding of the problems faced by those who are groping toward effective expression. Even those teachers of composition who feel that the student should not be circumscribed as to the form that his writing takes will find in this book much that is inspiriting and illuminating.

WILFRED EBERHART

WHITE, C. LANGDON, AND RENNER, GEORGE T. *An Introduction to Human Ecology*. New York: D. Appleton-Century Company, 1936. x+790 pp.

This excellent, stimulating book will, undoubtedly, arouse a considerable interest on the part of both professional geographers and the college student. It is easy to read and, consequently, should appeal to the layman as well as the student who desires to acquaint himself not alone with the philosophy of geography, but with the facts concerning the world in which he lives.

As one reads through pages and recalls the geographical vocabulary in our textbooks of some twenty years ago, one cannot help but be impressed by the growth of a terminology which is especially adapted to the science of geography. Space does not permit of a listing of these terms. In addition, the authors have borrowed liberally from the vocabulary of other sciences, particularly from the biological, for many expressions which they have aptly applied to their own science.

The organization of the book is different from that of most other available textbooks and in that respect is refreshing. While the nature of geography is briefly discussed in the introduction, a somewhat detailed presentation of the philosophy of the field is reserved for the latter part of the book. This is an improvement over other books that attempt such discussion at the outset before the beginner in the field of geography has a background into which the philosophy may be fitted. Illustrations and maps are well chosen and effective.

The authors make a number of provocative statements with which some professional geographers, of course, will take issue. This, however, is perhaps to be commended rather than condemned. The publication will find a worthy place in the literature of the field of geography.

EUGENE VAN CLEEF

BROWN, INA CORINNE. *The Story of the American Negro*. New York: Friendship Press, 1936. xiii+208 pp.

JOHNSON, CHARLES S. *A Preface to Racial Understanding*. New York: Friendship Press, 1936. ix+206 pp.

These small volumes, intended primarily for adult study groups, are simply written, factual, and inexpensive. They are, at the same time, scholarly and reliable, up-to-date and instructive.

Five of Brown's ten chapters deal with slavery—its origins, colonial pattern, spread over the cotton kingdom, and happy demise with emancipation. Use is made of the best historical research, and interpretations are consistently well balanced. The latter half of the book sketches the Negro's confusion following the Civil War, the tightening color line and his efforts to break through it, and his more recent gains and losses.

Johnson writes in only enough background for perspective. His chapters deal with the Negro worker, social factors (health, housing, family) in Negro life, the education of colored Americans, contributions to our common life,

the Negro's church, and the conquest of prejudice. Recent research findings on the nature of this and the extent of that give certain chapters something of the character of news even to specialists.

Neither volume finds any quick and easy way of bettering race relations, though both are aimed directly at broadening interracial understanding, appreciation, and co-operation. Though written more for church people than for educators, one wonders what would happen if the latter took to heart the principles set forth and applied them, with skill and patience and good timing, to local community problems.

LLOYD A. COOK

HANNA, PAUL R., *et al. Youth Serves the Community*. New York: D. Appleton-Century Company, 1936. xiv+303 pp.

The philosophy underlying this book may be summed up as follows: First, that the responsible facing of actual life situations is the ideal educative unit; and second, that situations in which young and adult members of the community join in co-operative endeavor for community improvement offer the greatest possibilities for educative experiences. The bulk of the book is devoted to reports of actual activities or projects making for community improvement and carried on by youth under adult guidance. The reports have been classified under the headings of "Public Safety," "Civic Beauty," "Community Health," "Agricultural Improvement," "Industrial Improvement," "Civic Arts," and "Local History." Reports are made in considerable detail. Activities of youth in foreign countries are included.

The reports are not intended as ideal examples of the community-improvement activities of youth. The value of the reports seems twofold: first, to illustrate important social and educational purposes for which such activities are conceived; and second, to indicate how such co-operative community activities can be instigated, planned, and executed.

WALTER HOWE

KNUDSEN, CHARLES W., AND MCAFEE, LUCIUS O. *An Introduction to Teaching*. Garden City, New York: Doubleday, Doran and Company, 1936. xvi+424 pp.

The title of this book is, in a sense, a misnomer. Designed as a textbook for use in an introductory course for prospective teachers, it assembles the most recent data upon such professional problems as the duties of the teacher, salaries, advancement, tenure, supply and demand, desirable intellectual and personal qualities, retirement plans, standards for teacher certification, and professional obligations. In this effort it fulfills in a scholarly way the recommendations of the National Survey of the Education of Teachers that such facts be considered in courses in education. Here the guidance counselors of secondary and undergraduate students will find reliable answers to the legitimate questions of those who earnestly desire to make an intelligent choice of their professional career. Here is a book which, without question, should be in the hands of every counselor and instructor who comes in contact with such students.

The concern of this book with the externals of teaching, however, leaves the reviewer puzzled by the title selected. Those who believe that teaching is an art, firmly grounded upon an integrated social philosophy and accom-

panied by a genuine concern for the growth of the individual child, will feel that this book discusses teaching from a restricted, even though important, point of view. Also, those who would base a student's professional choice upon a long-range program of continuous guidance will question the inference, possibly unintended by the authors, that we can ever give a course that will or can enable students to decide whether or not to enter the green pastures of education. Where such courses are offered, however, and certainly wherever reliable and pertinent information is desired, this book will fill, in a highly satisfactory manner, a genuine need in the field of professional guidance.

ALLEN D. PATTERSON

PATTERSON, S. HOWARD; CHOATE, E. A.; AND BRUNNER, E. DES. *The School in American Society*. Scranton, Pennsylvania: International Textbook Company, 1936. xii+570 pp.

This volume is the first in the "Modern School Series," designed for educators who wish to equip themselves better for their service to the youth of our country. If the succeeding volumes are as useful as this one, the series will be of great service. We are beginning to see more clearly that the curriculum must rest upon the double foundation of the biological inheritance of the child and his social heritage in the society of which he is a member. The latter purpose is served by this volume.

The last two sections of the book seem to be especially valuable. While recognizing the conserving function of education, the emphasis is upon education as a powerful factor in social progress. The authors would not have the school blueprint a new society and use all of its force toward the realization of a society so planned, but they do insist upon the importance of developing individuals who have contributive rather than adaptive social attitudes.

The authors have covered much ground. In order to limit the volume to reasonable size, they have dealt with many important topics inadequately. It might have been well to omit some entirely to make possible more complete treatment of the major thesis. It would seem that there is also an unnecessary amount of quotation from various writers. Although the triple authorship is evident in repetition and varying styles of writing, this book is worthy of study of everyone who is concerned with the social responsibility of American schools.

WILFORD M. AIKIN

TUTTLE, HAROLD SAXE. *The Campus and Social Ideals*. New York: The Author, 1936. v+88 pp.

Interesting techniques are used to attack the important problem of changes in the attitude of social-mindedness in college students. The author devises a test of social-mindedness by securing the judgments of 60 men and women with "outstanding reputation for social-mindedness." The test, in two equivalent forms, was given to Freshmen in four colleges, one earlier and one later in the year. The differences were computed to show the gain in social-mindedness. Eleven factors such as psychological score, religious affiliations, course instructors, encouragement of independent reading, and living conditions were correlated in bi-serial fashion to isolate the influence of each upon the total change.

No data are given to show the complexion of the 60 judges as right, left, or center, and therefore one does not know which type of social-mindedness is being measured. The factors selected in the college situation are not isolated for investigation with sufficient refinement to give the correlations much validity. This pioneering study will be of major interest to research workers as an example of promising techniques in an important field.

W. W. CHARTERS

WHITNEY, ALBERT W., Editor. *Man and the Motor Car.* New York: National Bureau of Casualty and Surety Underwriters, 1936. xvi+256 pp.

Babes in arms and persons permanently incarcerated are not concerned with the motor-car problem. To all the rest of us—as drivers, as pedestrians, as citizens—this problem is of vital importance. *Man and the Motor Car* which is planned as a high-school textbook was, therefore, warmly welcomed by the reviewer.

From the point of view of content, the book is satisfactory. The important aspects of the subject are covered. After a brief historical survey which indicates the scope of the problem, the following phases are discussed: mechanical construction of the automobile, the driver, road codes, the art of driving, buying and maintaining a car, accidents, and the pedestrian. The book closes with a vision of a future in which motor traffic will be governed by intelligence rather than laws. Questions on each chapter are given in the Appendix. A classified list of references and an index complete the book.

The presentation of this content, however, seems far from satisfactory. The following are some of the questions which came to the reviewer's mind:

Are words such as *practitioner*, *indomitably*, and *conflagrations*, likely to cause unnecessary vocabulary difficulty?

Is the mechanical section clear enough to be understood by high-school students? Would not labels on the diagrams help materially?

Are the pictographs satisfactory either as pictures or as graphs? Do not some of these present an entirely false impression as, for example, the one on page 120?

Is it not confusing for the graph to appear several pages before its explanation? (The graph on page 43 is explained on page 54.)

Is the make-up of the book, especially the size of type and placing of illustrations, such that promotes ease of reading?

What is the effect on the student of a picture portraying a wrong action without calling attention to the fact that it is wrong? This may be illustrated by the picture on page 173 which shows a man walking on the right-hand side of a rural highway. In the textual matter on page 215 attention is called to the fact that one should walk on the left-hand side of a rural highway. There is no reference to the picture in any of the textual matter and the picture is without a label.

When far-fetched metaphors, slang, and trite expressions are introduced into serious discussions with apparent attempt at humor, what is the effect on the student? The "long nose" of a car, "Public Enemy Number One," (referring to automobile accidents), knocking plans into "a cocked hat," and reference to the fact that the driver was once a "kid" are examples.

The only answer to these questions lies in the students themselves, but one reads the introduction in vain for mention of an experimental edition. The author shows clearly that he does not regard the student as one of us who are seeking a remedy to the problem. Rather he says, "For this new generation [of drivers] we look to the boys and girls in our high school; they must not fail us!"

Let us hope that the publishers will regard this edition as an experimental

one and will set about at once to gather data as to its suitability for high-school students. The problem is too important, the text too badly needed, to save on the research necessary to make this a truly functional book.

VIVIAN WEEDON

* * *

Democracy

[*Continued from page 76*]

works without trouble, it is taken for granted. A healthy man pays little attention to his body. Physiology and hygiene become subjects of study because bodily functions are likely to go wrong. Physiology is studied in school for prevention. Knowing the nature of the human body, children are more likely to observe the rules of hygiene.

Like the human body, the social body has its structure and functions which sometimes operate adequately and at other times fall below a satisfactory level of performance. To assure intelligent social performance on the part of children, familiarity with the nature of the democratic order in which they live is clearly indicated. As rules of physical hygiene are based upon the nature of the human body and are taught as healthful ways of living, so the customs, laws, and mores of democracy should be based upon a knowledge and understanding of the nature of the social body. Whether directly or indirectly taught, an analytical, critical, and sympathetic understanding of the structure and functions of our democratic society is indicated as a major objective of public education.

W.W.C.

Research Needed in Interest Evaluation

[*Continued from page 71*]

serve as a nucleus around which research in interest measurement may grow; that through the aid of these problems, research in interest measurement may become a co-operative venture wherein the work of one experimenter may supplement or expand that of another; and finally, that the development of interest will move from an intangible, unmeasurable objective toward an objective which may be evaluated with the same degree of effectiveness as any one of the content objectives.